CLAIMS

1. A substrate for a photoelectric conversion device comprising a first transparent conductive layer formed on at least a part of the surface region of a substrate, the first transparent conductive layer having at least an opening portion exposing the substrate.

2. The substrate of claim 1, wherein the first transparent conductive layer has a texture structure on its surface.

3. The substrate of claim 1, wherein an aperture ratio of the first transparent conductive layer is 0.8 to 37% and an average radius of the opening portion is 3.13 μm or less.

4. The substrate of claim 1, wherein the first transparent conductive layer has a sheet resistance of 5 to 25 Ω/□.

5. The substrate of claim 1, further comprising a second transparent conductive layer on the first transparent conductive layer, the second transparent conductive layer covering the opening portion of the first transparent conductive layer.

6. The substrate of claim 5, wherein the second transparent conductive layer has a thinner film thickness than that of the first transparent conductive layer.

7. The substrate of claim 5, wherein the second transparent conductive layer have a film thickness of 10 to 100 nm.

8. The substrate of claim 5, wherein the first and the second transparent conductive layers have a synthesized sheet resistance of 5 to 25 Ω/□.

9. The substrate of claim 1, wherein a haze index of the first transparent conductive layer is 65 % or higher, and a transmittance of light passing through the substrate and the first transparent conductive layer is 78% or higher.

10. The substrate of claim 9, further comprising a second transparent conductive layer on the first transparent conductive layer, the second transparent conductive layer covering the opening portion of the first transparent conductive layer, wherein the first and the second transparent conductive layers have a synthesized sheet resistance of 5 to 25 Ω/□.

11. A photoelectric conversion device comprising a photoelectric conversion layer and a backside electrode layer stacked in this order on the substrate of claim 1.

12. A stacked photoelectric conversion device comprising a plurality of photoelectric conversion layers and a backside electrode layer stacked in this order on the substrate of claim 1, a first intermediate layer sandwiched between at least a pair of adjacent two photoelectric conversion layers.

13. The device of claim 12, wherein the first intermediate layer has at least an opening portion, and the pair of the photoelectric conversion layers sandwiching the first intermediate layer therebetween come into contact with each other through the opening portion.

14. The device of claim 13, further comprising a second intermediate layer between the first intermediate layer and the photoelectric conversion layer

thereon, the second intermediate layer covering the opening portion of the first intermediate layer.

15. The device of claim 14, wherein the second intermediate layer has a thinner film thickness than that of the first intermediate layer.

16. A stacked photoelectric conversion device comprising a plurality of photoelectric conversion layers with these layers stacked, and an intermediate layer being sandwiched between at least a pair of adjacent photoelectric conversion layers, wherein the intermediate layer has at least an opening portion, and the pair of the photoelectric conversion layers sandwiching the intermediate layer therebetween come into contact with each other through the opening portion.

17. The device of claim 16, wherein the opening portions are in the form of isle.

18. The device of claim 16, wherein the intermediate layer is at least partially formed in the form of isle.

19. The device of claim 16, wherein the intermediate layer has a texture structure on its surface.

20. The device of claim 16, wherein one of the pair of photoelectric conversion layers sandwiching the intermediate layer therebetween has a larger bandgap than the other.

21. The device of claim 20, wherein one of the pair of photoelectric conversion layers sandwiching the intermediate layer therebetween is made of hydrogenated

amorphous silicon and the other is made of hydrogenated amorphous silicon.

22. The device of claim 16, wherein the intermediate layer has a aperture ratio of 0.5 to 90%.

23. The device of claim 16, wherein the intermediate layer has a aperture ratio of 16 to 63%.

24. The device of claim 22 or 23, wherein the intermediate layer has an average film thickness of 5 to 500nm.